UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

Reply to
Attn. Of: OWW-130

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

To all interested government agencies,
public groups, and individuals:

In accordance with the Environmental Protection Agency (EPA) procedures for complying with the National Environmental Policy Act (NEPA), 40 CFR Part 6, Subpart F, EPA has completed an environmental review of the following proposed action:

Renewal of the National Pollutant Discharge Elimination System (NPDES) Permit AK-003865-2
to:
Teck Cominco Alaska, Inc. (Red Dog Mine)

EPA ROLE AND RESPONSIBILITY:

The Red Dog Mine is considered a new source. "New Sources" are defined as any facility that discharges pollutants where construction commenced after the effective date of applicable New Source Performance Standards (NSPS) (40 C.F.R. Part 122.2). On December 3, 1982, EPA published effluent guidelines for the mining industry which are found at 40 C.F.R. Part 440. As a result, the permit is subject to the National Environmental Policy Act (NEPA) review as required under EPA's implementing NEPA regulations at 40 C.F.R. Part 6.

BACKGROUND

The Red Dog lead and zinc mine is located in northwest Alaska, approximately 80 miles north of Kotzebue and about 50 miles inland from the Chukchi Sea. The mine is located on Red Dog Creek in the DeLong Mountains. In 1984, EPA and the U.S. Department of Interior (DOI) issued an Environmental Impact Statement (EIS) for the Red Dog Mine Project. The EIS was prepared in response to several applications by Teck Cominco Alaska, Inc. (hereafter referred to as Teck Cominco) for federal authorizations required for the project. Two NPDES permits were issued for the project: one for the discharge of wastewater from the mine site, and one for the discharge of wastewater at the port site.

The original NPDES permit issued to the mine expired in 1990. In its application for permit renewal, Teck Cominco requested to increase the volume of effluent discharged. The requested change was outside the range of alternatives considered in the original EIS. As a result, EPA prepared an Environmental Assessment (EA) that evaluated potential impacts of the modifications and selected alternatives. EPA subsequently made a Finding of No Significant Impact (FONSI) and reissued the permit in August 1998.

The 1998 NPDES permit included metals limits which were significantly more stringent than the original permit. The permit also included a limit for TDS based on the Alaska Department of Environmental Conservation's (ADEC) narrative water quality criterion for aquatic life use. This criterion did not allow the in-stream TDS concentration to increase more than one third above the natural background TDS level. Therefore, the effluent limitation was set at 176 mg/L (monthly average) and 196 mg/L (daily maximum).

In 1999 ADEC revised its state-wide criteria for TDS to delete the one third above background narrative criterion. The revised criteria can allow in-stream TDS concentrations of 1,000 mg/L. Additionally, in 2002 ADEC established a TDS site- specific criterion (SSC) of 1,500 mg/L for Middle Fork Red Dog Creek and sought approval from EPA for an in-stream TDS criterion of 500 mg/L during resident Arctic grayling spawning in Mainstem Red Dog Creek. EPA approved the SSC for 1,500 mg/L TDS in Mainstem Red Dog Creek, which applies after Arctic grayling finish spawning (this occurs when there is free-flowing water after ice breakup, usually in late May or early June, for a period of as few as 6 days to as long as 11 days). EPA did not take action on the SSC for 500 mg/L during spawning.

In 2003, ADEC authorized mixing zones for Mainstem Red Dog Creek and Ikalukrok Creek. The mixing zone for Mainstem Red Dog Creek begins at the confluence of North Fork Red Dog Creek and Middle Fork Red Dog Creek and continues downstream for 1,930 feet. Station 151 is the monitoring station at the edge of the mixing zone. The mixing zone in Ikalukrok Creek begins at the confluence of Mainstem Red Dog Creek and Ikalukrok Creek and continues downstream 3,420 feet. Station 150 is the monitoring station at the edge of the mixing zone.

On July 17, 2003, EPA issued a modified NPDES permit. The modified permit was appealed and on June 15, 2004, the Environmental Appeals Board (EAB) remanded back to EPA the grayling spawning TDS limit (500 mg/L). These limits are currently stayed. On August 28, 2003, the NPDES permit expired and was administratively extended until renewed. EPA issued a Clean Water Action Section 308 Information Request to Teck Cominco on July 17, 2003 requiring tests to be performed to determine the effects of TDS on the spawning success of Arctic grayling and Dolly Varden. Based on the results of the tests (discussed in Section 4.2.1 of the EA), ADEC has adopted a site-specific criterion of 1,500 mg/L TDS at all times in Mainstem Red Dog Creek, including during Arctic grayling spawning periods, and will submit it to EPA for approval.

PURPOSE AND NEED OF ACTION

The purpose of the proposed action is to renew the Red Dog Mine NPDES permit. The proposed permit renewal reflects changes to the TDS limits during Artic grayling spawning in Mainstem Red Dog Creek. The proposed permit establishes effluent limits that will result in the in-stream criteria of 1,500 mg/L being met at the edge of the mixing zone (Station 151), and also establishes monitoring requirements.

Some of the conditions in the proposed permit are outside the range of alternatives considered in the original EIS. Therefore EPA has determined that an EA is appropriate and the analyses in the EA are incorporated by reference. The scope of the analyses in the attached EA pertains directly to the proposed changes in the NPDES permit and the reasonable alternatives. The affected environment described in the EA is limited to water resources, aquatic life, and human health. Other environmental resources, such as soils, vegetation, wildlife, air quality, land use, and socioeconomics would not be affected in any way by the proposed action. Descriptions of these resources can be found in the original EIS and the previous environmental assessments for the Red Dog Mine Project.

AGENCY PREFERRED ALTERNATIVE

EPA's Preferred Alternative, **Alternative 1**, involves the renewal of Teck Cominco's NPDES permit. The proposed permit renewal includes the following requirements and/or changes:

1. If EPA approves the SSC of 1,500 mg/L for TDS for the Arctic grayling spawning period, the permittee would be required to maintain in-stream TDS concentration at or below 1,500 mg/L at the edge of the mixing zone in Mainstem Red Dog Creek, including during spawning. If EPA does not approve the SSC, ADEC may allow for an adjustment up to 1,000 mg/L TDS during spawning periods. If the adjustment is not approved, then EPA will require 500 mg/L TDS limit at the edge of the mixing zone during spawning.

2. Remove the 3,900 mg/L end-of-pipe TDS limit for Outfall 001.

3. ADEC has proposed a mixing zone for cyanide. EPA determined that there is no reasonable potential for the effluent to cause or contribute to an exceedance of the standard outside the mixing zone, therefore, no limit is necessary. Weekly monitoring for cyanide remains unchanged. The proposed reissued permit requires the use of the Weak Acid Dissociable (WAD) cyanide analytical method.

4. ADEC has not re-certified the site-specific criterion used for zinc in the current permit, which contained a zinc limit based on the natural condition site specific-criteria provided in ADEC's 1998 CWA Section 401 certification of the permit of 210 μg/L. Therefore, the state-wide criteria of 269 μg/L would be utilized to

calculate the permit effluent limit. Compliance with the cyanide limits would be determined by the total cyanide analytical method.

OTHER ALTERNATIVE CONSIDERED

Alternative 2: Renew the NPDES Permit with No Changes

Under this alternative, EPA would not change the TDS limits that were in the 1998 NPDES permit. Instead, EPA would retain effluent limits for TDS of 170 mg/L (monthly average) and 196 mg/L (daily maximum). An effluent limit of 3,900 mg/L TDS would be retained end-of-pipe. Limits for total cyanide of 9 mg/L daily max and 4 mg/L monthly average would also be retained.

MITIGATION MEASURES

To lessen the potential for adverse environmental impact to environmental resources, Teck Cominco is undertaking several activities to reduce the concentrations of TDS in the effluent, as described below.

- Water Management and Treatment. Tests performed by Teck Cominco in 2001, 2003, and 2004 show that by treating high TDS flows from the mine sump and waste piles before they enter the tailings pond, a significant TDS load could be removed. A new treatment plant was constructed in 2005 to treat these flows. The treatment plant should be operational the entire 2006 season.

- TDS Source Control. Teck Cominco is evaluating a method to reduce the rate of metal sulfide oxidation, which would result in the reduction of the rate of TDS production. Tests conducted onsite with Red Dog waste rock resulted in the production of 50 percent less sulfate. Additional tests and research are continuing.

SUMMARY

Based on the EA and consideration of the proposed NPDES permit conditions, and in accordance with the guidelines for determining the significance of proposed federal actions (40 C.F.R. 1508.27) and EPA criteria for initiating an Environmental Impact Statement (EIS) (40 C.F.R. 6.605), EPA has concluded that the proposed NPDES permit will not result in a significant effect on the environment.

In accordance with NEPA regulations at 40 C.F.R. Part 1508.13, the findings of the EA are hereby incorporated by reference. The proposed permit will not significantly affect land use patterns or population, wetlands or flood plains, threatened or endangered species, farmlands, ecologically critical areas, historic resources, air quality, water quality, noise levels, fish and wildlife resources, nor will it conflict with approved local, regional, or state land use plans or policies. The proposal also conforms with all applicable federal statutes and executive orders. As a result of these findings, EPA has determined that a supplemental EIS will not be prepared.

Comments supporting or disagreeing with this FONSI may be submitted, within 30 days of the release of this FONSI, to:

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Additional copies of the EA can be obtained by calling Hanh Shaw at (206) 553-0171 or are available for public review on EPA's website at www.epa.gov/r10earth/water/npdes.htm and at the Kivalina Tribal Center.

No administrative action will be taken for at least 30 days after the release of this FONSI. EPA will fully consider all comments before taking final action.

/s/ Mary Kay Voytilla
Michael F. Gearheard, Director
Office of Water and Watersheds